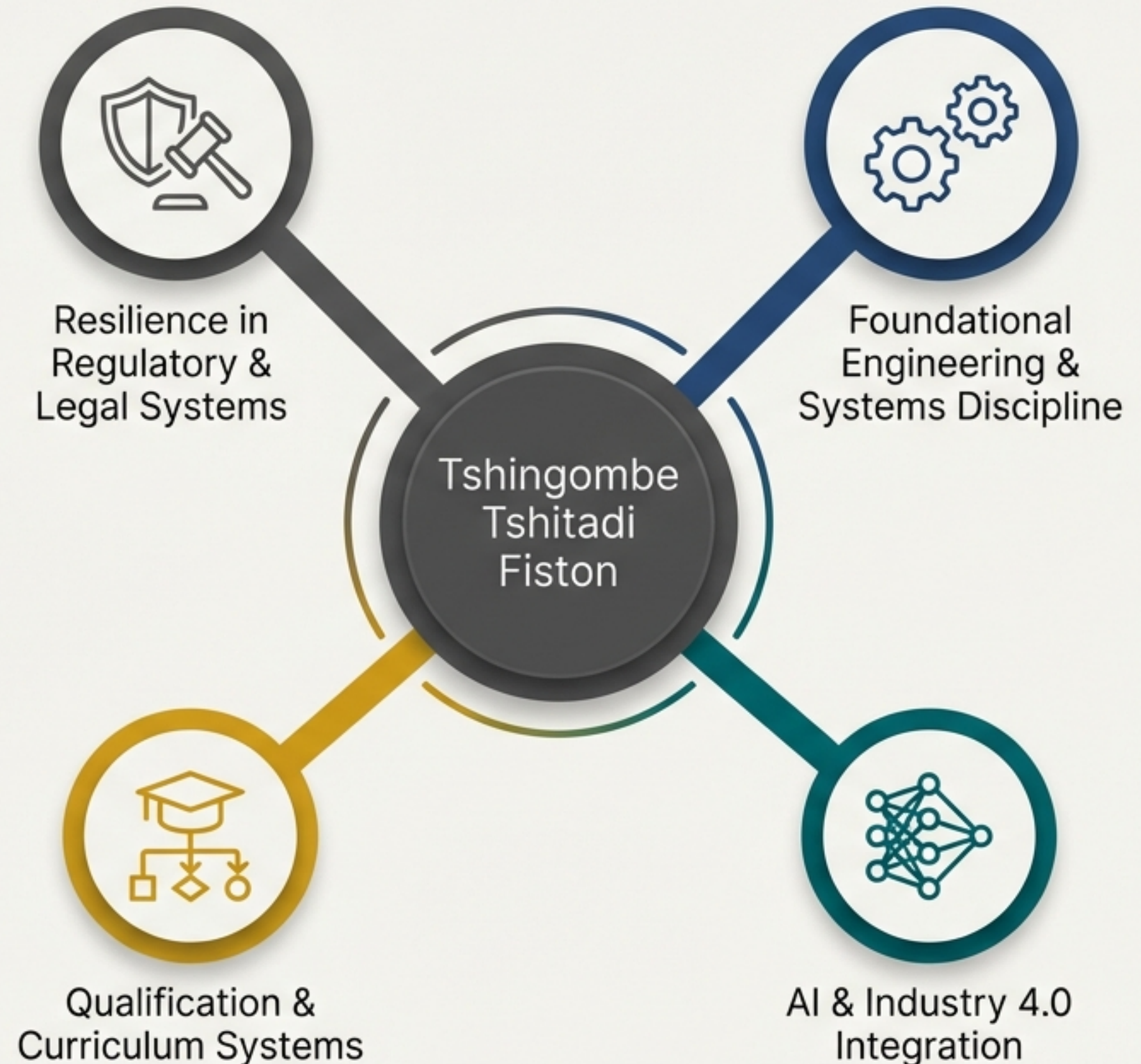


The Systems Integrator: Bridging Engineering, Defense, AI, and Compliance

A Professional Profile of Tshingombe Tshitadi Fiston

A Unique Nexus of Multidisciplinary Expertise

In a world of hyper-specialization, true innovation comes from those who connect the dots. This profile presents Tshingombe Tshitadi Fiston as a central hub integrating four critical domains. Each area represents a deep well of knowledge and practical application, but his core strength lies at their intersection.



A Foundation Forged in Precision: Mastering Military-Grade Engineering Standards

A deep understanding of Department of Defense (DoD) standard practices forms the bedrock of a disciplined approach to engineering. This involves mastery over the entire lifecycle of technical documentation, from preparation and revision to numbering, coding, and security classification.

MIL-STD-100G

Engineering Drawings

- **Numbering & Identification:** Expertise in DoD requirements for engineering drawings, associated lists, and product definition data, including CAGE Code, Part or Identifying Number (PIN) structure, and drawing number assignment for unique identification and configuration control.
- **Security Protocols:** Application of security classification markings and notations on drawings and associated lists (Appendix A).
- **Qualification & Sourcing:** Understanding of qualification provisions for source control drawings, ensuring multiple sources of supply and spare part availability (Appendix B).

MIL-STD-11991B

Parts, Materials & Processes

- **Counterfeit Prevention:** Procedures for avoiding, detecting, and containing counterfeit parts and materials.
- **Prohibited Materials:** Awareness of restricted materials (e.g., specific aluminum alloys, cadmium plating, corrosive RTVs) to ensure system reliability.
- **COTS Evaluation:** Criteria for evaluating Commercial Off-The-Shelf items for integration into military systems.

From Theory to Practice: Applying Systems Thinking to Technical Challenges

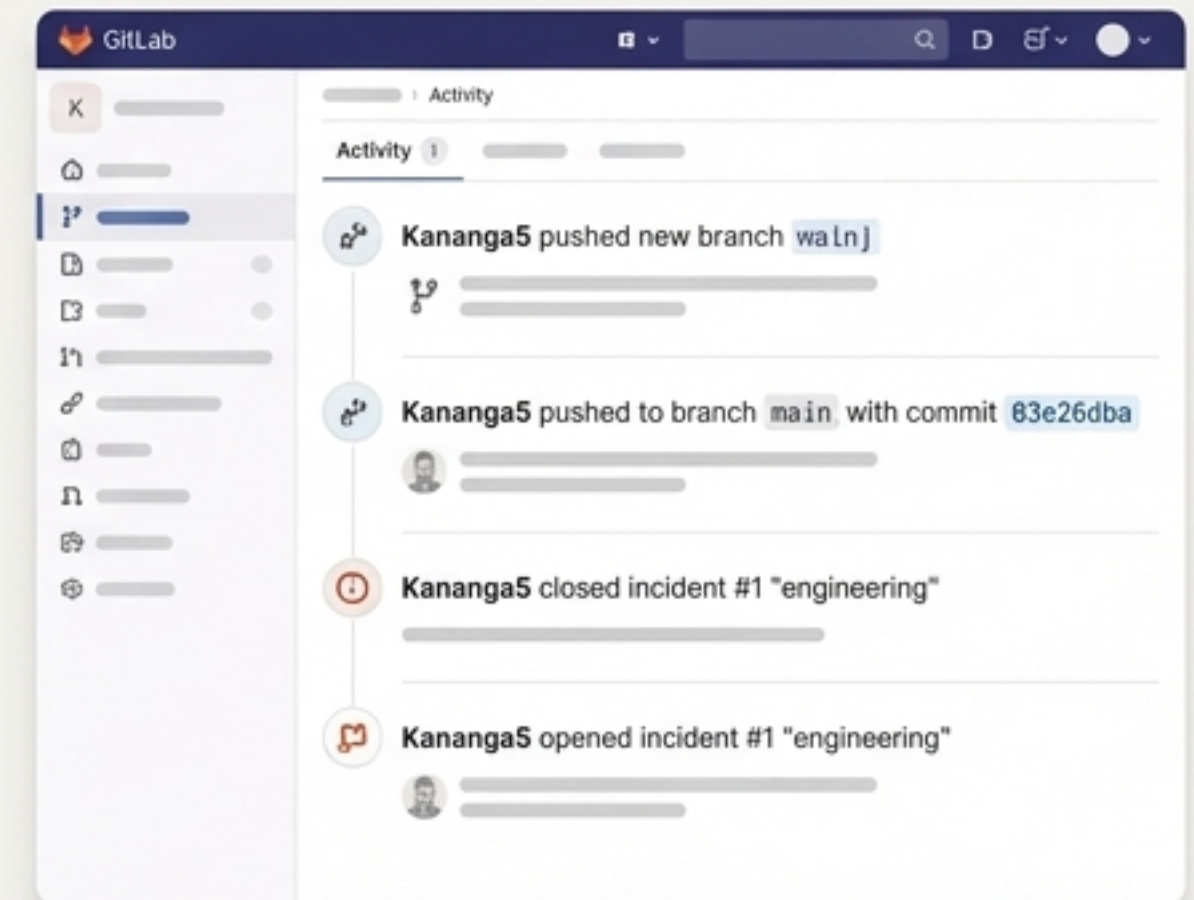
A disciplined foundation is only valuable when applied. This expertise is demonstrated through **hands-on work** in electrical and **electronic systems**, a commitment to modern development practices, and the systematic compilation of evidence.

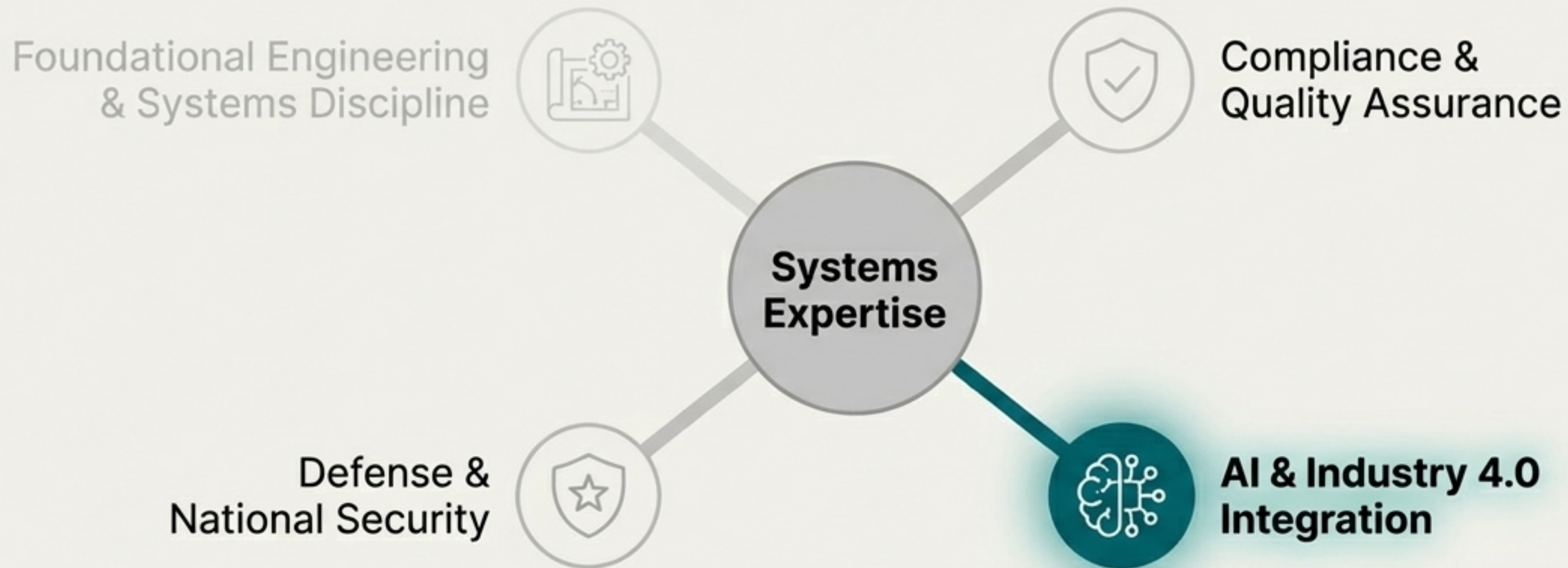
Practical Electrical Engineering

- Comprehensive training in electrician trade theory (NSQF Level 5), covering:
- Circuit Analysis (Ohm's & Kirchhoff's Laws),
- Component & System Knowledge (capacitors, 3-phase AC), and
- Safety & Standards (5S, NEC).

Modern Development Workflow

- Active use of contemporary software development and project management platforms: GitLab for managing an engineering database repository (issue tracking, merge requests, CI/CD) and Azure DevOps for work item tracking and project management.





Building on a foundation of engineering discipline, the next layer of expertise focuses on integrating the technologies of the future.

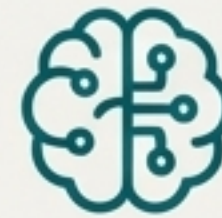
Acquiring the Language of the Future: Fluency in Artificial Intelligence

True integration of AI requires more than buzzwords; it demands a fundamental understanding of its principles, applications, and ethical considerations. This is demonstrated through completion of a comprehensive AI fluency program in partnership with Microsoft and Sci-Bono.

****Core Concepts Mastered****

- **AI Fundamentals:** Differentiating true AI from simple automation.
- **Knowledge vs. Intelligence:** Understanding the distinction through frameworks like John Searle's 'Chinese Room Argument'.
- **The Role of Data:** Recognizing data as the 'fuel for AI,' essential for pattern recognition, prediction, and learning.
- **Machine Learning Models:** Mastery of Supervised, Unsupervised, and Reinforcement Learning.

Proof Point: 6 AI Certifications (Sci-Bono & Microsoft)



AI Basics



Generative AI



**Internet Search
and Beyond**



**Responsible
AI**



**Microsoft
Copilot**



AI For All

Implementing Intelligence: From AI-Enhanced Smart Grids to Smart Factories

The value of AI is realized when applied to solve real-world industrial challenges. This is demonstrated through proficiency with advanced didactic laboratories that simulate and test the integration of AI into critical infrastructure and manufacturing processes.

Smart Grid Enhanced with AI (DL SGWD-AI)



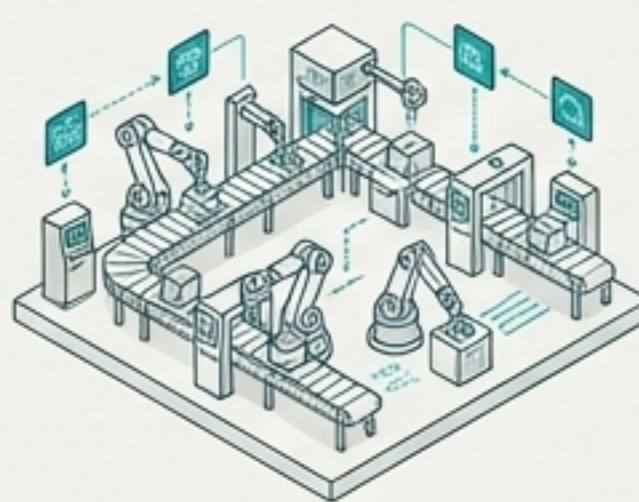
Capability

- Combines traditional electrical networks with AI-driven data analytics for predictive load management and fault isolation.

Skills

- Designing intelligent distribution networks, implementing AI algorithms for grid optimization, evaluating cybersecurity via MODBUS RTU and SCADA-WEB platforms.

Smart Factory Enhanced with AI (DL I4.0 FACTORY-AI)



Capability

- Simulates modern manufacturing environments using Cyber-Physical Systems and IoT-enabled devices.

Skills

- Managing smart production lines, using AI for process optimization and predictive maintenance, understanding digital twin concepts.

AI Development Laboratory (DL AI-BASE & DL AI-2.0)

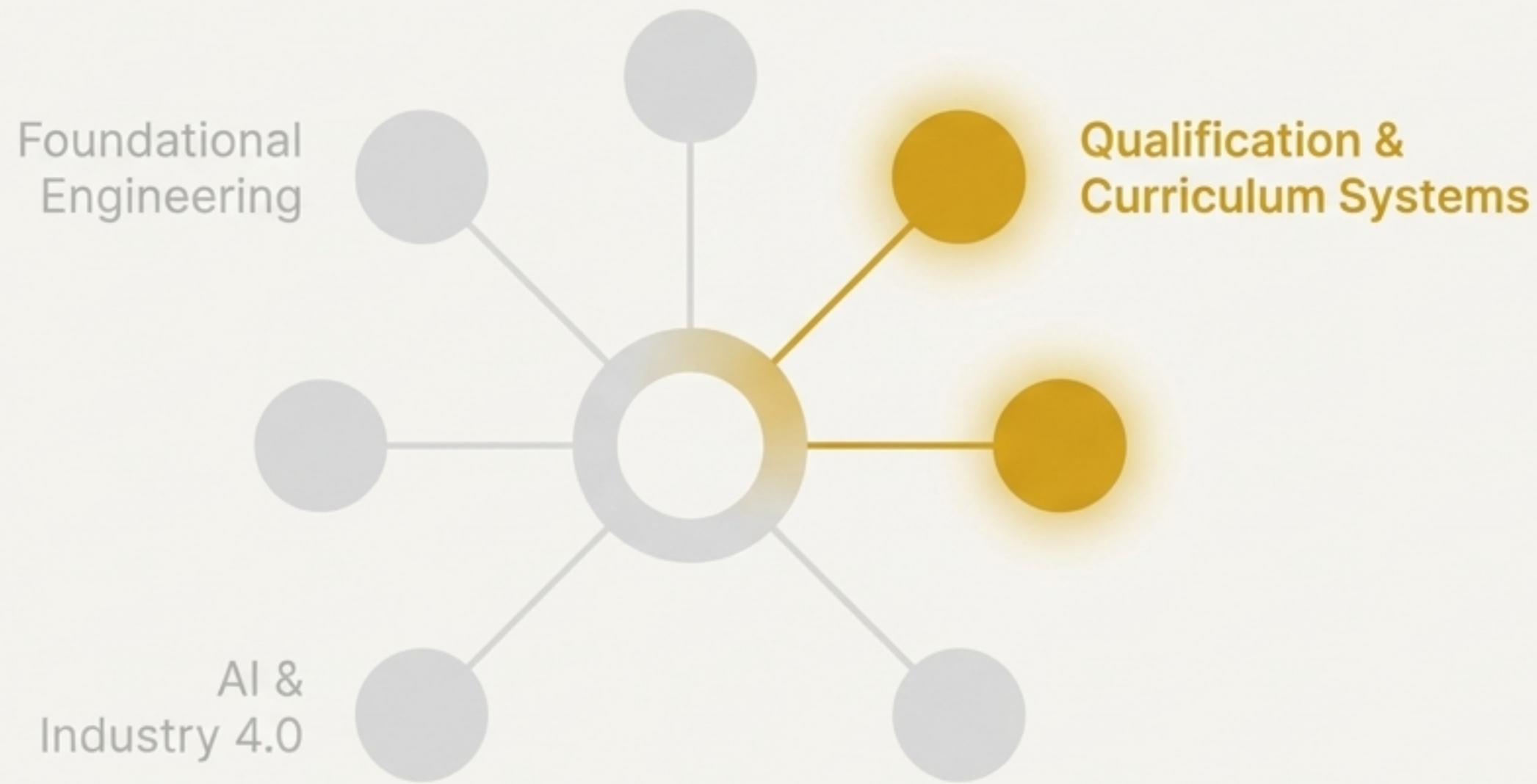


Capability

- A challenge-based learning environment for building and training AI models for industrial applications.

Skills

- Hardware/software integration for AI experimentation in anomaly detection and efficiency improvement.



Beyond technical application, a systems thinker must also understand and shape the frameworks that develop human capital.

Navigating the National Framework: Expertise in Qualification and Accreditation

Effective technical development requires a holistic understanding of the national ecosystem for education and training. This involves deep familiarity with the qualification frameworks, quality councils, and sectoral authorities that govern skill development in South Africa.

The SA Educational Ecosystem



Architecting Future Skills: From Curriculum Reform to Research Proposals

True systems integration involves not just navigating existing structures but actively contributing to their evolution. This is demonstrated through formal research proposals aimed at advancing technical education and aligning vocational training with the demands of Industry 4.0.

Initiatives & Research

Thesis Proposal

A research proposal titled “Implementation and framework national qualification and national trade examination curriculum...” aimed at creating a more integrated and effective model for TVET education in South Africa.

NSF Project Pitch (Ref: 00095759)

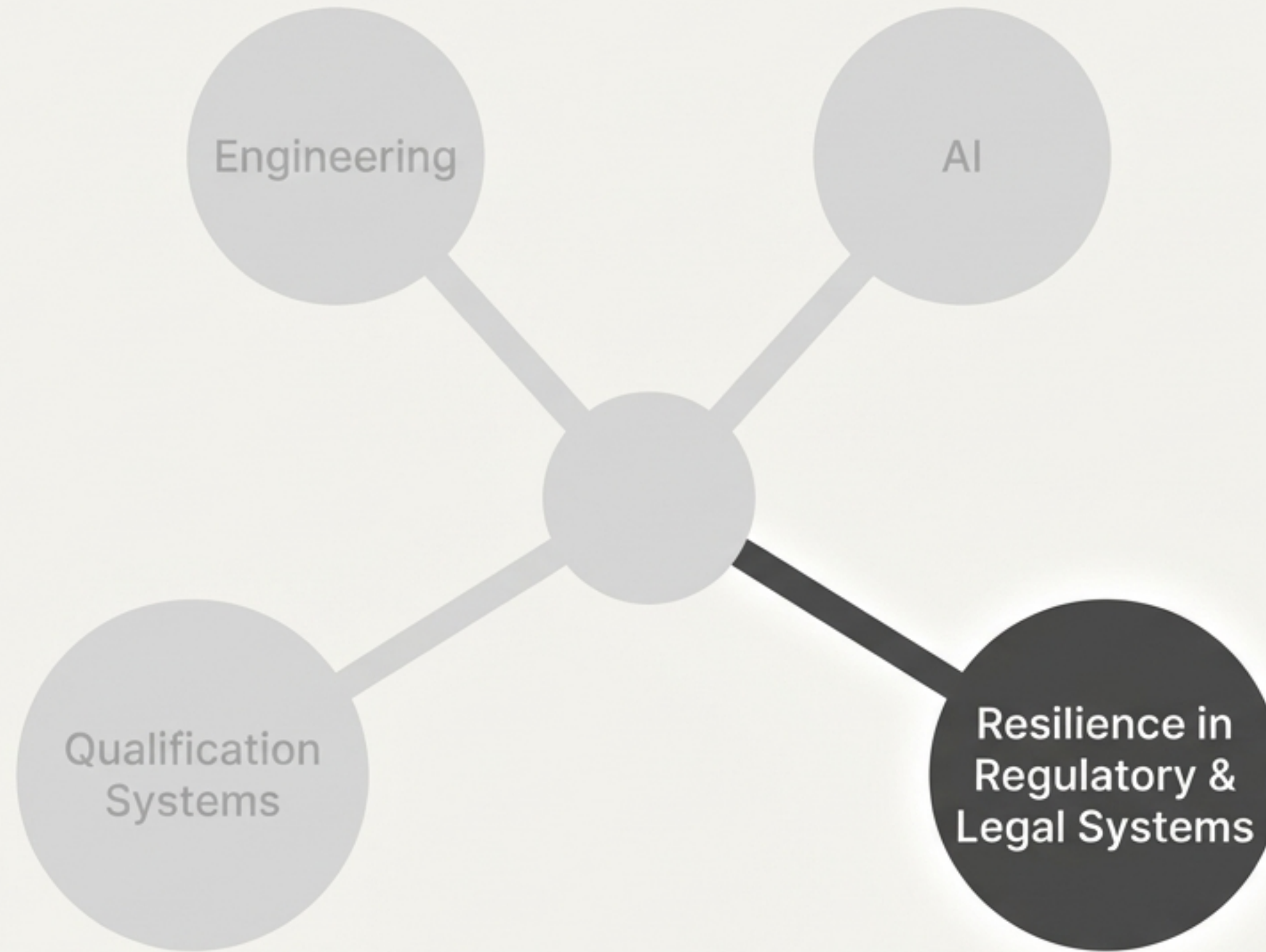
An Advanced Manufacturing pitch addressing the need for an improved framework for NATED & NCV qualification systems, proposing a new system to resolve backlogs and inefficiencies in the TVET assessment model.

NRF Funding Applications

Active engagement with the national research community through submissions to the National Research Foundation, including applications for Institutional Grants.

My Applications | NRF Connect

Reference	Applied Date	Status
FBIC250410310077	10/04/2025	Application Complete
NFSG250411310257	11/04/2025	Application In Progress
AUPP250414310636	14/04/2025	Application In Progress



Technical and systemic knowledge must be paired with the **resilience** to navigate the complex, often adversarial, world of legal and regulatory challenges.

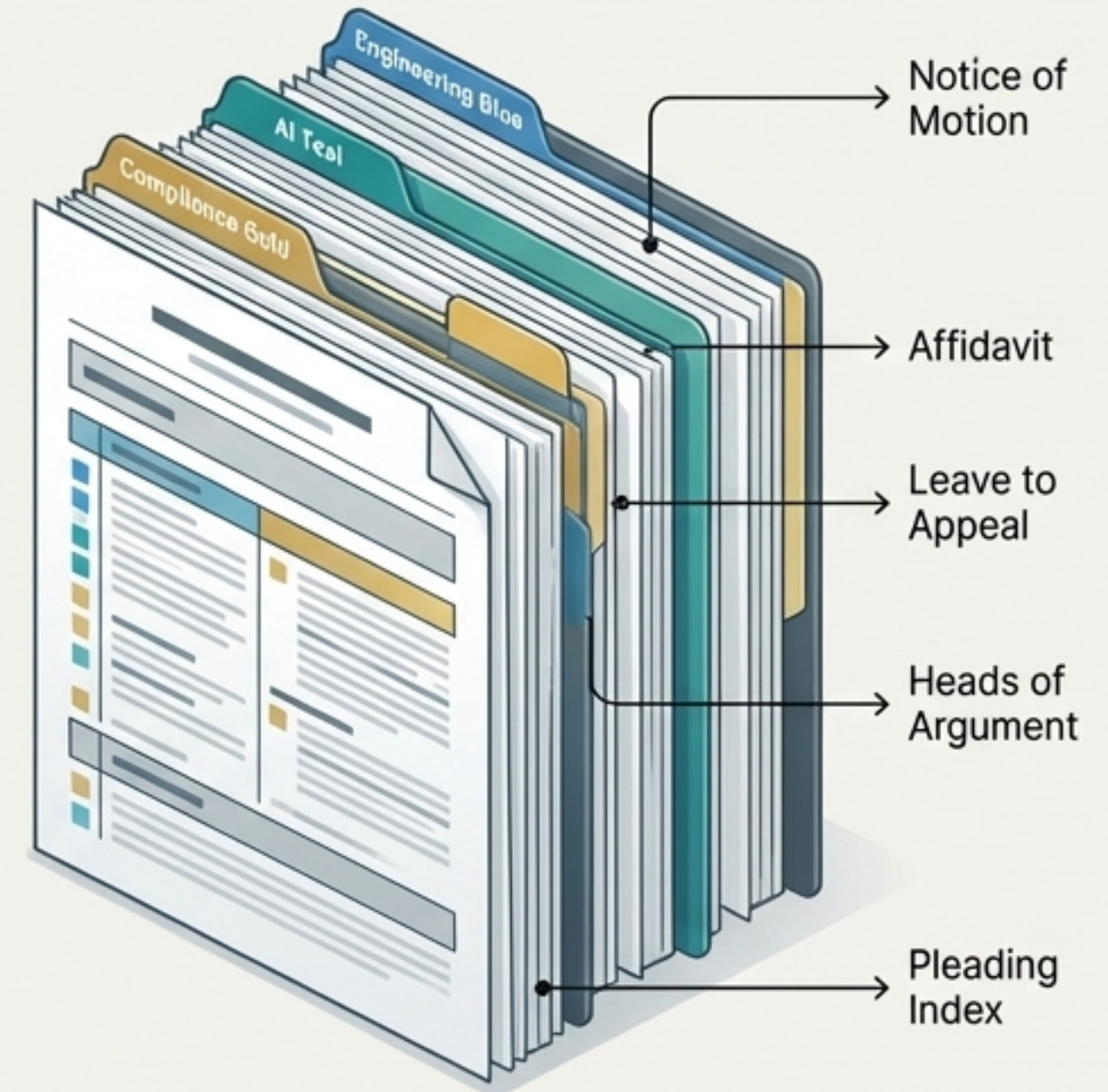
Resilience Under Pressure: Navigating Complex Legal and Institutional Challenges

Professional careers are often tested by legal and administrative hurdles. The ability to methodically navigate these challenges is a critical skill, demonstrating perseverance and an understanding of formal procedures.

Case Study: Labour Court Appeal (JR 2461/15)

- **Challenge:** Contesting an unfair dismissal dispute with the CCMA and escalating to the Labour Court.
- **Demonstrated Skills:**
 - **Procedural Navigation:** Successfully filing a referral outside the 30-day limit (requiring a condonation application) and managing the case through multiple stages.
 - **Document Preparation:** Compiling and submitting comprehensive legal filings, including a "Notice of Motion," "Affidavit," "Leave to Appeal," and "Heads of Argument."
 - **Evidence Management:** Systematically organizing a "Pleading Index & Casebook" with meticulous page references for all legal documents, demonstrating high-level administrative competence.

"The applicant has a history of no attendance at hearing and shows a disregard for the court process."
(from Judgement)



Driving Compliance and Verification: From Foreign Qualifications to Data Protection

Navigating institutional systems extends from legal disputes to qualification verification and modern data compliance. Each interaction is an opportunity to demonstrate meticulousness and a commitment to meeting established standards.

SAQA Foreign Qualification Evaluation



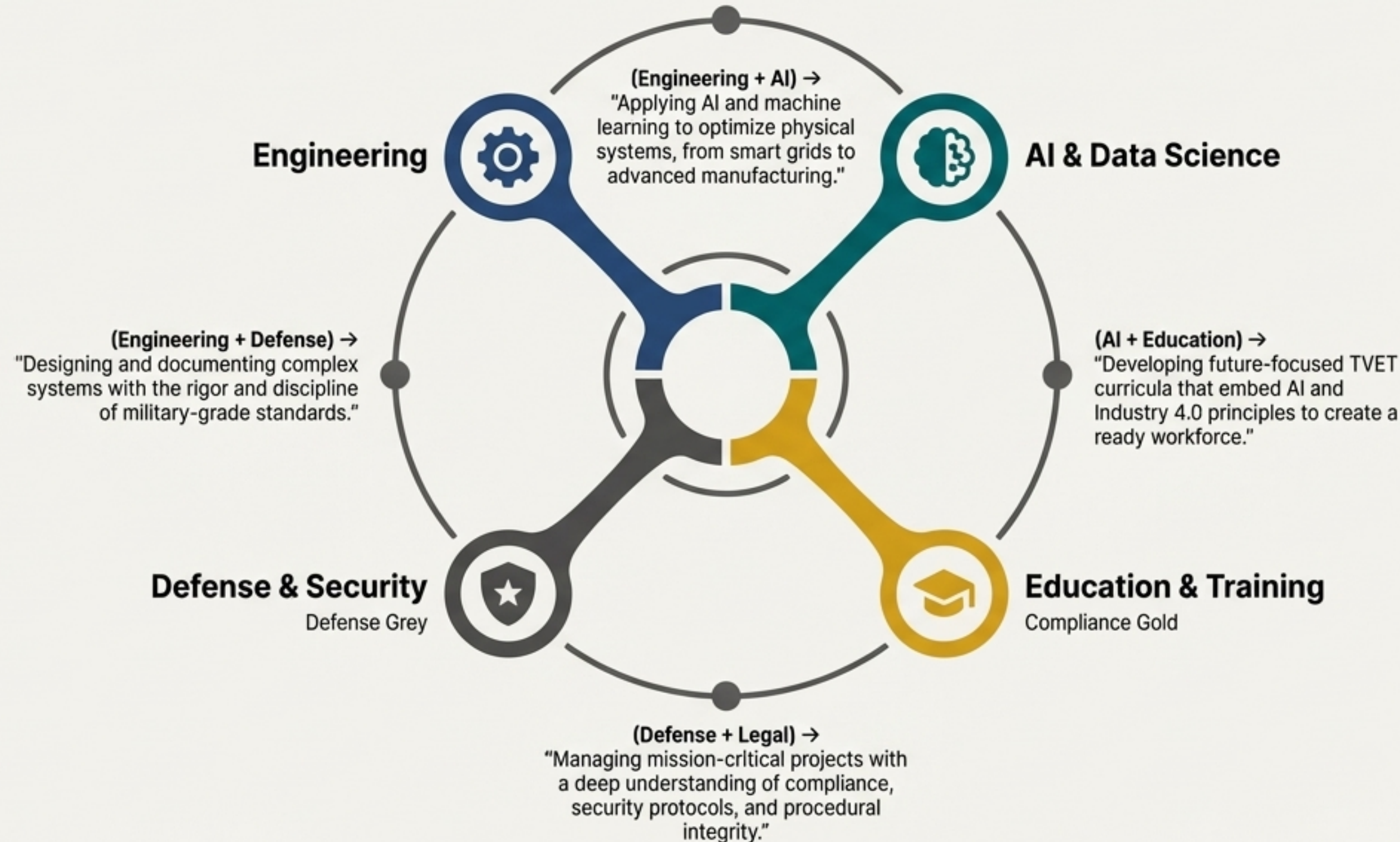
This multi-step process demonstrates persistence in the face of bureaucratic obstacles by systematically addressing feedback to achieve compliance.

Broader Standards Compliance



Knowledge extends to documentation for professional registration and licensing, complemented by formal training in the Protection of Personal Information Act (Act No. 4 of 2013).

The Synergistic Advantage: Connecting Domains for Unprecedented Value



A Systems Integrator Ready for the Next Complex Challenge

A rare professional fluent in the languages of engineering, defense systems, artificial intelligence, and regulatory frameworks. Possesses a proven ability to analyze, navigate, and innovate within complex, multi-layered environments.



Disciplined & Methodical

Grounded in military and engineering standards.



Technically Fluent

Proficient in both traditional engineering and emerging AI technologies.



Systemically Aware

Understands the intricate networks of education, accreditation, and compliance.



Demonstrably Resilient

Proven capacity to overcome significant legal and bureaucratic challenges.

Ready to lead projects at the intersection of technology, compliance, and strategic development.

Email: tshingombefiston@gmail.com
Portfolio: [\[Link to GitLab/Archive.org\]](#)